Prose and Document Literacy

Executive Summary

The framework establishing the Prose and Document Literacy scales for ALL is identical to that used in the International Adult Literacy Survey (IALS), which is based on the notion of literacy originally developed and used in several earlier North American surveys. Through these earlier assessments and IALS, the conception of literacy outlined in the framework has been successively refined and validated. The only difference between the conceptions of literacy employed in IALS and ALL is the absence of the Quantitative Literacy scale used in IALS, which has been replaced with a separate Numeracy scale in ALL.

Literacy is defined as using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential. This conception of literacy is a broad one, and differs from the traditional concept of literacy as a dichotomous capacity that individuals either have or do not have.

Prose Literacy refers to the understanding and use of information embedded in various texts, such as newspaper articles, pamphlets, and fiction, and it involves locating, integrating, and generating information. Document Literacy refers to the understanding and use of information found in materials such as tables, application forms, and transportation schedules, and involves locating, cycling, integrating, and generating information. These conceptualizations of literacy, the scales, and items developed to measure literacy focus on everyday tasks and situations that participants are likely to encounter in their daily lives.

Prose and Document Literacy[1]

In recent years, adult literacy has come to be seen as crucial to the economic performance of industrialized nations. Literacy is no longer defined merely in terms of a basic threshold of reading ability, mastered by almost all those growing up in developed countries. Rather, literacy is now seen as how adults use written information to function in society. Today, adults need a higher level of literacy to function well: society has become more complex and low-skill jobs are disappearing. Therefore, inadequate levels of literacy among a broad section of the population potentially threaten the strength of economies and the social cohesion of nations.

With these high stakes, governments have a growing interest in understanding the level and distribution of literacy among their adult populations, and what can be done to improve them. In particular, they have been trying for the first time to measure adult literacy directly. Pioneering studies (Creative Research Group 1987; Kirsch, et al. 1992; Kirsch, et al. 1993; Kirsch and Jungeblut 1986; Montigny, Kelly, and Jones 1991) published in North America in the early 1990s revealed that a significant proportion of people lacked the literacy skills they were likely to need in their everyday lives. In 1992, the Organization for Economic Cooperation and Development (OECD) concluded that low literacy levels were a serious threat to economic performance and social cohesion (OECD 1992). But a broader understanding of literacy problems across industrialized countries, and of consequent policy lessons, was hindered by a lack of comparable international data.

The International Adult Literacy Survey (IALS) provided the first cross-national comparisons of literacy skills among adults. The first phase of the survey was conducted in 1994 in eight countries and resulted in the 1995 publication *Literacy, Economy and Society* (OECD and Statistics Canada, 1995). The second phase of the survey was conducted in four additional countries in 1995 and was used along with data from the first phase to produce the 1997 publication *Literacy Skills for the Knowledge Society* (OECD and Human Resources Development Canada, 1997). A third phase is currently collecting data in 12 countries.

Defining Literacy

Before the IALS, many studies treated literacy as a condition that adults either have or do not have, and hence tried to count the number of illiterates. These efforts tended to define literacy in terms of a number of completed years of schooling or a grade-level score on school-based reading tests. The IALS design team agreed that it would be undesirable to establish a single international standard for literacy. Such a standard would not only be arbitrary, but would also fail to acknowledge the multifaceted nature of literacy and the complexity of the literacy problem. Instead, the participating countries agreed that, in accordance with recent North American and Australian surveys (Wickert, 1989), IALS would define literacy in terms of a mode of adult behavior, namely:

[1] This paper is primarily based on material that was prepared by Irwin Kirsch for *Literacy, Economy and Society* (OECD and Statistics Canada, 1995).

> *Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential.*

This definition—which will also be used for the Adult Literacy and Lifeskills survey (ALL)—attempts to encompass a broad set of information-processing skills that adults may be called upon to use in performing many different types of tasks—at work, at home, or in their communities.

Literacy can neither be narrowed down to a single skill suited for dealing with all types of text, nor defined as an infinite set of skills, each particular to a different type of material. Following the example of the North American studies referred to above, the IALS experts decided to define literacy in terms of three domains, each encompassing a common set of skills relevant for diverse tasks:

- ***Prose Literacy*:** the knowledge and skills needed to understand and use information from texts including editorials, news stories, poems, and fiction
- ***Document Literacy*:** the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables, and graphics
- ***Quantitative Literacy*:** the knowledge and skills required to apply arithmetic operations, either alone or sequentially, to numbers embedded in printed materials, such as balancing a checkbook, figuring out a tip, completing an order form, or determining the amount of interest on a loan from an advertisement

In each of these domains, rather than expressing a threshold for achieving literacy, a scale from 0 to 500 upon which tasks of varying difficulty were placed was constructed. Item difficulty is based on the interaction of task characteristics as determined by the materials available for the task, the content/context of the task, and what the respondent is asked to do. Based on collective performances, the difficulty of items is then estimated along the scales, and participants are assigned scores on each scale based on their individual performance. Inasmuch as literacy is interpreted as a continuum ranging from basic decoding skills to understanding complex ideas and information, the scales are divided into five distinct levels of difficulty/ability, with higher levels indicating more difficult items and higher-order literacy skills. A person's literacy ability in each domain can be expressed by a score, defined as the point at which he or she has an 80% chance of successfully performing a given task. For analytical purposes and for designing remedial programs, it is useful to group people into five levels of literacy (see Annex A), corresponding to ranges of scores achieved (for example, Level 1 includes scores from 0 to 225).

Because Quantitative Literacy will not be used in ALL, it will not be discussed further in this paper.

Prose Literacy

The ability to understand and use information contained in various kinds of textual material is an important aspect of literacy. The International Adult Literacy Survey therefore included an array of prose selections, including text from newspapers, magazines, books, pamphlets, and brochures. The material varied in length, density, content, and use of structural or organizational aids such as headings, bullets, and special typefaces. All prose samples were reprinted in their entirety with the original layout and typography intact.

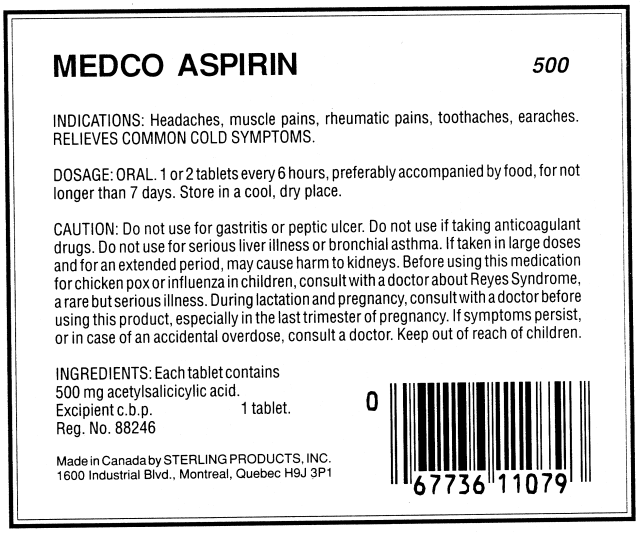
Each prose selection is accompanied by one or more questions or directives asking the reader to perform specific tasks. These tasks

represent three major aspects of information-processing: ***locating***, ***integrating,*** and ***generating***. Locating tasks require the reader to find information in the text based on conditions or features specified in the question or directive. The match may be literal or synonymous, or the reader may need to make an inference in order to perform successfully. Integrating tasks ask the reader to pull together two or more pieces of information in the text. In some cases, the information can be found in a single paragraph, while in others it appears in different paragraphs or sections. In the generating tasks, readers must produce a written response by processing information from the text and also by making text-based inferences or drawing on their own background knowledge.

It is important to remember that the tasks requiring the reader to locate, integrate, and generate information extend over a range of difficulty as a result of interactions with other variables, including the following:

- The number of categories or features of information the reader must process
- The extent to which information given in the question or directive is obviously related to the information contained in the text
- The amount and location of information in the text that shares some of the features with the information being requested and, thus, seems plausible but does not fully answer the question; these are called "distractors"
- The length and density of the text

The tasks have been divided into five difficulty levels (see Annex A). The easiest tasks—those at Level 1—generally require the reader to locate and match a single piece of textual information in which the target word or phrase appears only once. The text is usually brief or has organizational aids such as paragraph headings or italics that suggest where



MEDCO ASPIRIN *500*

INDICATIONS: Headaches, muscle pains, rheumatic pains, toothaches, earaches. RELIEVES COMMON COLD SYMPTOMS.

DOSAGE: ORAL. 1 or 2 tablets every 6 hours, preferably accompanied by food, for not longer than 7 days. Store in a cool, dry place.

CAUTION: Do not use for gastritis or peptic ulcer. Do not use if taking anticoagulant drugs. Do not use for serious liver illness or bronchial asthma. If taken in large doses and for an extended period, may cause harm to kidneys. Before using this medication for chicken pox or influenza in children, consult with a doctor about Reyes Syndrome, a rare but serious illness. During lactation and pregnancy, consult with a doctor before using this product, especially in the last trimester of pregnancy. If symptoms persist, or in case of an accidental overdose, consult a doctor. Keep out of reach of children.

INGREDIENTS: Each tablet contains
500 mg acetylsalicicylic acid.
Excipient c.b.p. 1 tablet.
Reg. No. 88246

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1600 Industrial Blvd., Montreal, Quebec H9J 3P1

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the reader should search for the specified information. For example, a task associated with the aspirin label above asks the reader to determine the "maximum number of days you should take this medicine." The label contains only one reference to the number of days and this information is located under the heading "DOSAGE."

More difficult tasks require the reader to process more complex information. A task at Level 4 directs the reader to use the information from a pamphlet about a hiring interview to "write in your own words one difference between the panel interview and the group interview." Here readers need to read the brief descriptions about each type of interview. In addition, rather than merely locating a fact about each or identifying a similarity, they need to integrate what is being presented to infer a characteristic on which the two types of interviews differ. Typically, tasks at this level contain more distracting information and the information requested is more abstract than in lower level tasks.

The Hiring Interview

Preinterview

Try to learn more about the business. What products does it manufacture or services does it provide? What methods or procedures does it use? This information can be found in trade directories, chamber of commerce or industrial directories, or at your local employment office.

Find out more about the position. Would you replace someone or is the position newly created? In which departments or shops would you work? Collective agreements describing various standardized positions and duties are available at most local employment offices. You can also contact the appropriate trade union.

The Interview

Ask questions about the position and the business. Answer clearly and accurately all questions put to you. Bring along a note pad as well as your work and training documents.

The Most Common Types of Interview

One-on-one: Self explanatory.
Panel: A number of people ask you questions and then compare notes on your application.
Group: After hearing a presentation with other applicants on the position and duties, you take part in a group discussion.

Postinterview

Note the key points discussed. Compare questions that caused you difficulty with those that allowed you to highlight your strong points. Such a review will help you prepare for future interviews. If you wish, you can talk about it with the placement officer or career counsellor at your local employment office.

Annex A describes task characteristics at each level of the Prose and Document Literacy scales.

Document Literacy

Adults often encounter materials such as tables, schedules, charts, graphs, maps, and forms at home, at work, or when travelling in their communities. The knowledge and skills needed to process information contained in these documents are, therefore, an important aspect of being literate in a modern society. Success in processing documents appears to depend at least in part on the ability to locate information in a variety of displays, and to use this information in various ways. Sometimes, procedural knowledge may be required to transfer information from one source to another, as is necessary in completing applications or order forms.

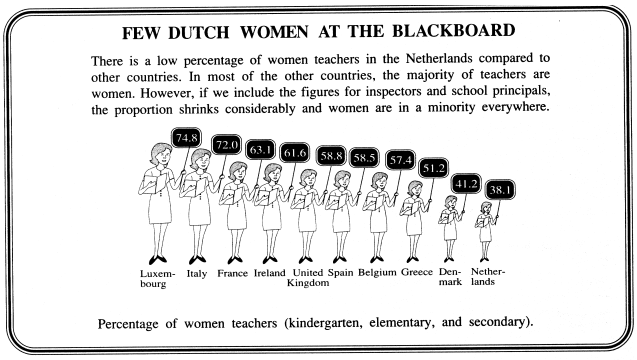
Questions or directives associated with the various document tasks are basically of four types: **locating**, **cycling**, **integrating,** and **generating**. Locating tasks require the reader to match one or more features of information stated in the question to either identical or synonymous information given in the document. Cycling tasks require the reader to locate and match one or more features of information, but differ from locating tasks because they require the reader to engage in a series of feature matches to satisfy conditions given in the question. Integrating tasks typically require the reader to compare and contrast information in adjacent parts of the document. In generating tasks, readers must produce a written response by processing information found in the document and by making text-based inferences or drawing on their own background knowledge.

As with the prose tasks, each type of question or directive associated with a document task extends over a range of difficulty as a result of interactions among several other characteristics:

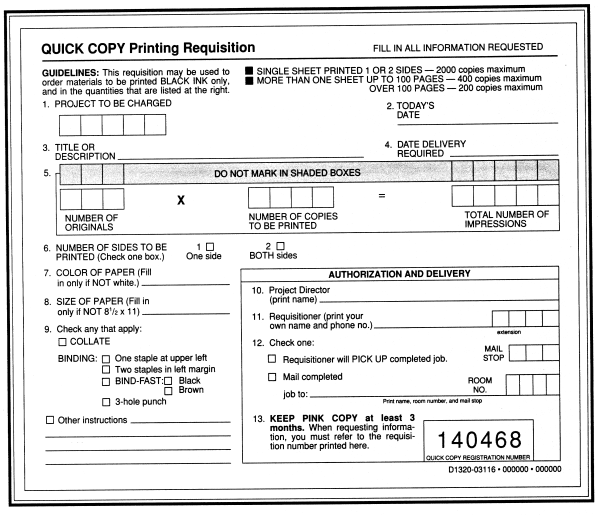
- The number of categories or features of information in the question the reader must process or match
- The number of categories or features of information in the document that seem plausible or correct because they share some but not all of the information with the correct answer
- The extent to which the information asked for in the question is obviously related to the information stated in the document
- The structure and content of the document

Document Literacy tasks have also been divided into five literacy levels (see Annex A). The easiest tasks require the reader to make a literal match on the basis of a single piece of information. Information that could be distracting is typically located away from the

correct answer. For example, in a task associated with the document *Few Dutch Women at the Blackboard*, the reader is asked to identify the percentage of teachers from Greece who are women.



A task falling in the middle range of difficulty is based on a *Quick Copy Printing Requisition* form that might be found in the workplace. The task asks the reader to explain whether or not the quick copy center would make 300 copies of a 105-page article. In responding to this directive, the reader must determine whether conditions stated in the question meet those provided in the guidelines to this document.



Annex A describes task characteristics at each level on the Prose and Document Literacy scales.

Additional information regarding the task characteristics of the literacy scales and their scoring rubrics has been documented in the literature (Kirsch, 1995; Kirsch and Mosenthal, 1990; Kirsch and Mosenthal, 1995, Mosenthal, 1998; Mosenthal and Kirsch 1989; and Mosenthal and Kirsch 1991).

Literacy in Context

Since adults do not read printed materials in a vacuum but read them within a particular context or for a particular purpose, materials that represent a variety of contexts or content areas were used. Six adult content/context areas associated with work, home, and community were identified:

- **Home and family**: interpersonal relationships, personal finance, housing, and insurance
- **Health and safety**: drugs and alcohol, disease prevention and treatment, safety and accident prevention, first aid, emergencies, and staying healthy
- **Community and citizenship**: community resources and being informed
- **Consumer electronics**: credit and banking, savings, advertising, making purchases, and maintaining personal possessions
- **Work:** occupations, finding employment, finance, and being on the job
- **Leisure and recreation**: travel, recreational activities, and restaurants

With respect to selecting contexts and contents, an attempt has been made to include as broad a range as possible as well as to select from among those that might be as relevant as possible to a broad-cross section of adults. This helps to ensure that the materials selected are not so specialized as to be familiar only to certain groups or certain cultures.

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Annex A: Prose and Document Literacy Levels

	Prose Literacy	Document Literacy
Level 1 (0-225)	Most of the tasks at this level require the reader to locate one piece of information in the text that is identical or synonymous to the information given in the directive. If a plausible incorrect answer is present in the text, it tends not to be near the correct information.	Most of the tasks at this level require the reader to locate a piece of information based on a literal match. Distracting information, if present, is typically located away from the correct answer. Some tasks may direct the reader to enter personal information onto a form.
Level 2 (226-275)	Tasks at this level tend to require the reader to locate one or more pieces of information in the text, but several distractors may be present, or low-level inferences may be required. Tasks at this level also begin to ask readers either to integrate two or more pieces of information or to compare and contrast information.	Document tasks at this level are a bit more varied. While some still require the reader to match on a single feature, more distracting information may be present or the match may require a low-level inference. Some tasks at this level may require the reader to enter information on a form or to cycle through information in a document.
Level 3 (276-325)	Tasks at this level tend to direct readers to search texts to match information that requires low-level inferences or that meets specified conditions. Sometimes the reader is required to identify several pieces of information that are located in different sentences or paragraphs rather than in a single sentence. Readers may also be asked to integrate or to compare and contrast information across paragraphs or sections of text.	Tasks at this level appear to be most varied. Some require the reader to make literal or synonymous matches, but usually the matches require the reader to take conditional information into account or to match on multiple features of information. Some tasks at this level require the reader to integrate information from one or more displays of information. Other tasks ask the reader to cycle through a document to provide multiple responses.
Level 4 (326-375)	These tasks require readers to perform multiple-feature matching or to provide several responses where the requested information must be identified through text-based inferences. Tasks at this level may also require the reader to integrate or contrast information that is sometimes presented in lengthy texts. Typically, these texts contain more distracting information and the information that is requested is more abstract.	Tasks at this level, like those in the previous levels, ask the reader to match on multiple features of information, to cycle through documents, and to integrate information; frequently, however, these tasks require the reader to make higher-order inferences to arrive at a correct answer. Sometimes conditional information is present in the document that must be taken into account by the reader.
Level 5 (376-500)	Some tasks at this level require the reader to search for information in dense text that contains a number of plausible Distractors. Some require readers to make high-level inferences or use specialized knowledge.	Tasks at this level require the reader to search through complex displays of information that contain multiple distractors, to make high-level inferences, process conditional information, or use specialized knowledge.